TOTAL LARYNGECTOMY FOR CARCINOMA.

REPORT OF A RECENT SUCCESSFUL CASE.

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THE patient, C. E. W., aged 46 years, had always enjoyed good health up to the present trouble, which began two years ago, when he first noticed that he was gradually getting hoarse. He consulted his family physician, Dr. G. N. Ferris, and was under his care for about six months. At the end of that time he was referred to Drs. C. C. Rice and Ferguson, of New York, under whose care he has been since that time. In the beginning the case was regarded as a papilloma of the right vocal cord, and eight months ago it was removed by Dr. Rice, resulting in immediate restoration of the voice. In about two months, however, the hoarseness returned, and the growth was again removed; this second operation was again followed by a return of the hoarseness in about two months, and in spite of local treatment, the growth persisted. It was now apparent that it was malignant in nature, and the advisability of a more radical operation was suggested. The condition of the laryngeal involvement, when the patient came under the writer's care, is shown in the accompanying sketches (Figs. 1, 2 and 3).

After consultation with Drs. Rice and Ferguson, who gave me the foregoing history, and with Dr. P. H. Sturgis, who saw the case with me, and after looking up the literature upon the subject, particularly an article by W. W. Keen,[1] of Philadelphia, the writer advised a total laryngectomy, for the reason that the operation as described by Keen appealed to us as being by far the most rational surgical procedure to adopt in such a case; there being, as he says, but one objection, namely, the loss of voice, which we believed should not be considered in dealing with a malignant growth of the larynx. The question is not, shall the patient talk, but shall he survive the operation, and

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the danger of recurrence be reduced to the minimum. Having explained to the patient the danger of the operation and the disability that might result therefrom, he requested that it be done. The larynx was totally removed by me on April 18, 1906, with the assistance of Dr. J. B. Bogart, at the Methodist Episcopal Hospital in Brooklyn.

The shoulders having been slightly elevated to extend the neck, the patient was placed under chloroform anæsthesia. An incision was then made, extending from the body of the hyoid bone to the episternal notch, and the larynx and trachea exposed to a point just below the cricoid cartilage; the soft parts were then dissected away from the larynx well back to the œsophagus. The hæmorrhage, which was not great and came principally from the upper border of the thyroid isthmus, was now controlled. The patient was placed in the Trendelenburg position, and the trachea divided just below the cricoid cartilage, and immediately sutured to the skin by two chromic gut sutures, one on either side.

Some coughing, which followed, was immediately controlled by the application to the tracheal mucous membrane of a solution composed of equal parts of one to one thousand adrenalin solution and 4 per cent. eucaine. The larynx was then lifted up by the finger and rapidly dissected from the œsophagus up to its upper border. The thyro-hyoid membrane, together with the other structures attaching it to the pharynx, were then divided, and the organ removed. The epiglottis, which was not involved, was spared. The upper margin of the pharynx was now attached by a double row of cat-gut sutures to the tissues just below the hyoid bone; the first row of plain cat-gut to secure approximation of the mucous membrane; the second of chromic gut to secure firm apposition of wound surfaces. The soft parts were then sutured from above downward with interrupted cat-gut sutures, and the skin by a chromic subcuticular. A drain was now brought out at the lower angle, and two more chromic gut sutures were introduced, uniting the trachea more firmly to the skin.

The entire operation lasted forty minutes, the excision itself taking twenty-five minutes. No further anæsthetic was used after the trachea was divided during the remaining fifteen minutes occupied in closing the wound, and none was necessary,

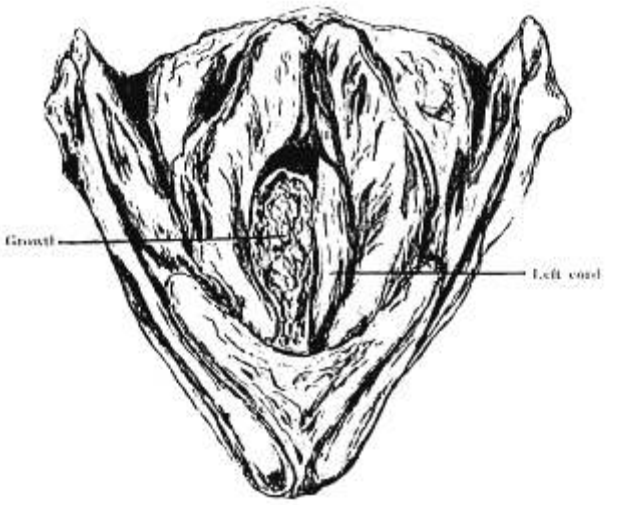

FIG. 1.—The larynx and growth as it appeared from above.

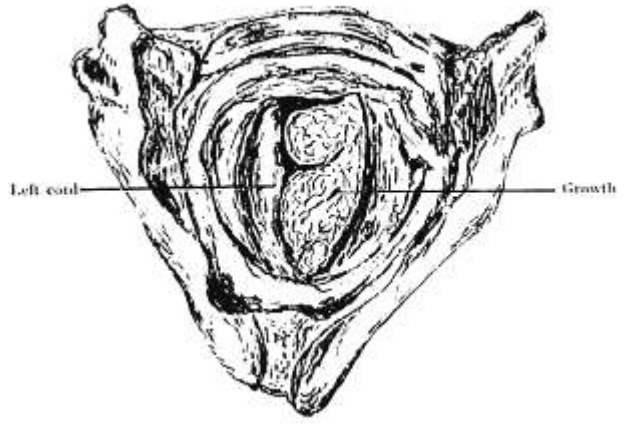

FIG. 2.—The larynx and growth as it appeared from below.

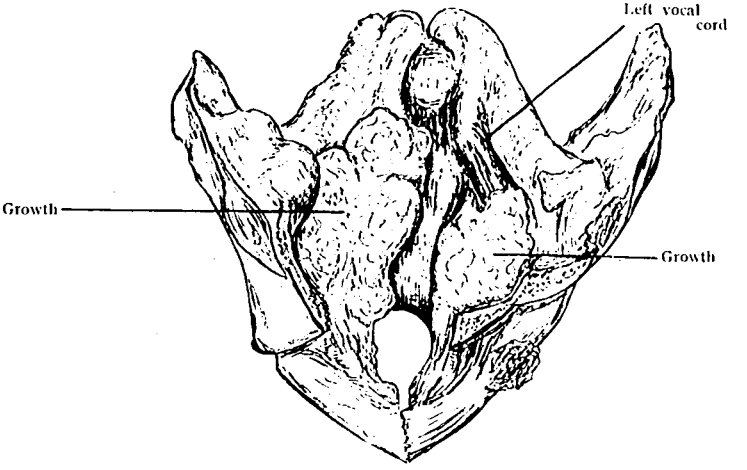

FIG. 3.—The larynx split open anteriorly, showing the growth involving the right vocal cord and extending to the left.

FIG. 4.—Present condition after laryngectomy. Tracheal aperture in midline of the neck.

although the patient was partially conscious of what was going on. He suffered no particular shock. His pulse at the beginning of the operation was ninety-eight; at its completion, one hundred and twelve.

A simple piece of sterile gauze was placed over the tracheal wound; the sutured portion was sealed with collodion, and the patient was placed in bed in the Trendelenburg position.

On the third day he sat up in bed, and on the fourth he sat up in a chair for an hour. The temperature rose on the day following the operation to 102–2-10°F., but did not go above that point, and gradually fell to normal on the tenth day. He was fed by rectum for thirty-six hours. At the end of that time he could swallow liquids in half-teaspoonful doses with some difficulty, as it required two or three efforts to get it down. He continued to swallow with greater ease until the seventh day, when it was found that a few drops of the liquid came through, and ran into the trachea causing him to cough. After this all nourishment was given in the Trendelenburg position for six days. At the end of that time, the leak had completely closed, and he was able to take food as usual. With the exception of the leak above mentioned, the wound healed by first intention throughout.

Microscopic examination of the growth after removal confirmed the diagnosis of carcinoma.

The operation as described is practically that suggested by Keen. At the conclusion of his article, however, he says, "In my next case, after dividing the trachea transversely, I shall quickly attach the tracheal stump to the skin. Then I shall introduce the ordinary tracheotomy tube into the open end of the trachea, instead of through a tracheal wound, and continue the anæsthetic through the tube." This step we omitted entirely, and completed the operation without the use of a tracheotomy tube or anæsthetic. In fact, our patient has never worn a tube up to the present time. Whether it may be necessary in the future, remains to be seen.

It certainly was not necessary at the operation, and by its omission I am sure we were relieved of some embarrass-

ment. The drain, if one is used at all, should be brought out at the center of the wound, and not at the lower angle. In this position it soon becomes foul, and prevents primary union at this point. Had the wound been sutured well down to the tracheal opening in this case, the fluids would have been prevented from entering the trachea when the leak occurred, but would have escaped through the drainage opening. In using the absorbable sutures throughout, we adopted the suggestion of Keen, as the silk used by him gave trouble.

In conclusion, we would say as the result of our experience in this case, that neither preliminary tracheotomy nor tampon-canulæ are necessary in these cases to prevent blood from entering the trachea; that the advantages of the Trendelenburg position, both at the operation and in the after treatment, cannot be overestimated, as it absolutely prevents blood or secretions from entering the trachea; that the use of even an ordinary tracheotomy tube may, with advantage, be dispensed with.

I am indebted to Dr. H. G. Webster for the drawings, and to Dr. C. F. Buckley for the photograph.